Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) An isolated epitope comprising the formula

$$[(W)_z - P - (Y)_t - P]_q \qquad \text{Formula (I)}$$

with $(S)_r$ attached to $(Y)_t$

Wherein:

W is any amino acid other than Aspartate and Glutamate

Y is any naturally occurring moiety that is capable of being sulfated

P is $(A)_m(A)_n(X)_u$ or $(X)_u(A)_n(A)_m$ or $(A)_n(X)_u(A)_m$ or $(A)_n(A)_m(X)_u$ or $(X)_u(A)_m(A)_n$ or $(A)_m(X)_u(A)_n$

S is sulfate or a sulfated molecule

X is any amino acid except Aspartate, Glutamate, or Tyrosine

A is any negatively charged amino acid or leucine, isoleucine, proline, phenylalanine, serine, or glycine

q is 1 to 6

z is 0, 1, or 2

r is 0 or 1

t is 1, 2 or 3

u is 0 to 2

n is 0 to 3

m is 0 to 3

wherein if n = 0 then m >0; wherein if m = 0 then n >0; wherein if q is 1, r is 1, and if q is >1 at least one of Y is sulfated; and further wherein the isolated epitope is capable of being bound by an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, comprising a first hypervariable region comprising SEQ ID NO: 20.

2. (previously presented) An isolated epitope of claim 1 wherein the sulfated moiety is a peptido or glyco or lipo conjugate.

3. (previously presented) The isolated epitope of claim 1 wherein:

W is Glycine,

Y is a peptido conjugate of Tyrosine or a glyco conjugate of Asparagine, Serine or Threonine.

A is Glutamate, γ Carboxy Glutamate or Aspartate

q is 1, 2, or 3

4. (previously presented) The isolated epitope of claim 3 wherein:

Y is a peptido conjugate of Tyrosine

q is 3

r is 1

5. (previously presented) An isolated epitope comprising the formula

$$(W)_z - P - (Y)_r - P - (Y)_t - P - (Y)_t - P \qquad \begin{matrix} (S)_r & (S)_r & (S)_r \\ | & | & | \end{matrix}$$

Formula II

Wherein:

W is any amino acid other than Aspartate and Glutamate

Y is any naturally occurring moiety that is capable of being sulfated

P is $(A)_m(A)_n(X)_u$ or $(X)_u(A)_n(A)_m$ or $(A)_n(X)_u(A)_m$ or $(A)_n(A)_m(X)_u$ or $(X)_u(A)_m(A)_n$ or $(A)_m(X)_u(A)_n$

S is a sulfate or a sulfated molecule

X is any amino acid except Aspartate, Glutamate or Tyrosine

A is any negatively charged amino acid or leucine, isoleucine, proline, phenylalanine, serine, or glycine

z is 0, 1, or 2

r is 0 or 1

t is 1, 2 or 3

u is 0 to 2

n is 0 to 3

m is 0 to 3

wherein if n =0 then m > 0; wherein if m = 0 then n > 0; wherein at least one Y is sulfated; and further wherein the isolated epitope is capable of being bound by an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, comprising a first hypervariable region comprising SEQ ID NO: 20.

6. (previously presented) The isolated epitope of claim 5 wherein the sulfated moiety is a peptido or glyco or lipo conjugate.

7. (previously presented) The isolated epitope of claim 5 wherein:

W is Glycine

Y is a peptide conjugate of Tyrosine or a glyco conjugate of Asparagine, Serine or Threonine

A is Glutamate, γ Carboxy Glutamate or Aspartate, Leucine, Isoleucine, Proline, Phenylalanine, serine, or glycine.

8. (previously presented) The isolated epitope of claim 7 wherein:

Y is a peptido conjugate of Tyrosine

q is 3; and

r is 1

9. (previously presented) An isolated epitope comprising the formula

$$\begin{array}{ccccc} & (S)_r & & (S)_r & & (S)_r & \\ & | & & | & & | & \\ (G)_z(X)_u(E)_n(D)_m(Y)_t & (X)_u(E)_n(D)_m(Y)_t & (X)_u(E)_n(D)_m(Y)_t & (D)_m(E)_n(X)_u \end{array}$$ Formula III

Wherein:

G is Glycine

E is Glutamate

D is Aspartate

Y	is Tyrosine
S	is sulfate or a sulfated molecule
X	is any amino acid except the above
z	is 0, 1, or 2
t	is 1, 2 or 3
r	is 0 or 1
u	is 0 to 2
n	is 0 to 3
m	is 0 to 3

wherein at least one Y is sulfated; wherein if n = 0 then m > 0; wherein if m = 0 then n > 0; and further wherein the isolated epitope is capable of being bound by an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, comprising a first hypervariable region comprising SEQ ID NO: 20.

10. (previously presented) The isolated epitope of claim 9 wherein r is 1.

11. (previously presented) The isolated epitope of any one of claims 1-8, wherein the naturally occurring moiety that is capable of being sulfated Y comprises a lipid, carbohydrate, peptide, glycolipid, glycoprotein, lipoprotein, and/ or lipopolysaccharide molecule.

12 (previously presented) A homolog or mimetic of the isolated epitope of any one of claims 1-10.

13 (previously presented) The isolated epitope of any one of claims 1-10, wherein the isolated epitope comprises at least one post-translational modification in addition to sulfation.

14. (previously presented) A composition comprising the isolated epitope of any one of claims 1-10.

15. (previously presented) The composition of claim 14 further comprising an upstream or downstream region capable of improving the binding capacity of the epitope.

16. (previously presented) The composition of claim 15, wherein the upstream or downstream region is proximate to the epitope.

17. (previously presented) An isolated polynucleotide encoding at least a portion of the isolated epitope of any one of claims 1-10.

18. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, capable of binding to or cross reacting with the isolated epitope of claim 1.

19. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, capable of binding to or cross reacting with the isolated epitope of claim 5.

20. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, capable of binding to or cross reacting with the isolated epitope of claim 9.

21. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, capable of binding to or cross reacting with the isolated epitope of any of claims 2-4, 6-8, or 10-13.

22. (currently amended) A process for producing an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, capable of binding to or cross reacting with the isolated epitope of any of claims 1-13, comprising the steps of

(a) providing a phage display library;

(b) providing an isolated epitope according to any one of claims 1-13;

(c) panning the phage display library for a phage particle displaying an oligopeptide or polypeptide capable of binding to the isolated epitope; and

(d) producing an antibody, antigen-binding fragment thereof, or complex thereof

comprising at least one antibody or binding fragment thereof comprising an antibody or binding fragment thereof, comprising the peptide or polypeptide capable of binding to the isolated epitope.

~~(e) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, having the binding capabilities of the scFv antibody fragment of SEQ ID NO: 203.~~

23. (new)An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, having the binding capabilities of the scFv antibody fragment of SEQ ID NO: 203.

24. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, having the binding capabilities of a peptide or polypeptide, wherein the peptide or polypeptide comprises a first hypervariable region comprising or SEQ ID NO: 20.

25. (previously presented) The antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof of any one of claims 23-24, further wherein the peptide or polypeptide has a second hypervariable region comprising SEQ ID NO: 115 and/ or a third hypervariable region comprising SEQ ID NO: 114.

26 (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof comprising an antibody or binding fragment thereof, that is capable of binding to a peptide or polypeptide epitope of about 3 to about 126 amino acid residues in length and comprising at least 2 acidic amino acids and at least one sulfated tyrosine residue.

27. (previously presented) The antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 26, wherein the epitope further comprises a proline, leucine, isoleucine, serine, glycine, or phenylalanine residue.

28. (previously presented) The antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of any of claims 23-27, wherein the antibody or antigen-binding fragment thereof further is capable of binding to an epitope on a carbohydrate, peptide, glycolipid, glycoprotein, lipoprotein, and/ or lipopolysaccharide molecule.

29. (previously presented) The antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 28, further wherein the epitope on the carbohydrate, peptide, glycolipid, glycoprotein, lipoprotein, and/ or lipopolysaccharide molecule comprises at least one sulfated moiety.

30. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, that is capable of binding to at least two different molecules selected from the group consisting of PSGL-1, fibrinogen gamma prime (γ'), GP1bα, heparin, lumican, complement compound 4 (CC4), interalpha inhibitor, and prothrombin.

31. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, that is capable of binding to at least two different molecules selected from the group consisting of PSGL-1, fibrinogen gamma prime (γ'), GP1bα, heparin, lumican, complement compound 4 (CC4), interalpha inhibitor, and prothrombin and is capable of binding to at least one cell type selected from the group consisting of B-CLL cells, AML cells, multiple myeloma cells, and metastatic cells.

32. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 31, that is capable of binding to each of PSGL-1, fibrinogen gamma prime (γ'), GP1bα, and heparin.

33. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 32, capable of binding to each of PSGL-1, fibrinogen gamma prime (γ'), GP1bα, and heparin and is capable

of binding to at least one cell type selected from the group consisting of B-CLL cells, AML cells, multiple myeloma cells, and metastatic cells.

34. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, that is capable of binding to at least two different molecules selected from the group consisting of PSGL-1, fibrinogen gamma prime (γ'), GP1bα, heparin, lumican, complement compound 4 (CC4), interalpha inhibitor, and prothrombin and further is capable of binding to an epitope on a lipid, carbohydrate, peptide, glycolipid, glycoprotein, lipoprotein, and/ or lipopolysaccharide molecule.

35. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 34, further wherein the epitope on the lipid, carbohydrate, peptide, glycolipid, glycoprotein, lipoprotein, and/ or lipopolysaccharide molecule comprises at least one sulfated moiety.

36. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, that is capable of crossreacting with two or more epitopes, each epitope comprising one or more sulfated tyrosine residues and at least one cluster of two or more acidic amino acids.

37. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 36 that is capable of crossreacting with PSGL-1.

38. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 37 that binds to QATEYEYLDYDFLPETE wherein at least one tyrosine residue is sulfated.

39. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 36 that is capable of crossreacting with GP1b-α.

40. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 36 that binds to DEGDTDLYDYYPEEDTEGD wherein at least one tyrosine residue is sulfated.

41. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 39 that binds to TDLYDYYPEEDTE wherein at least one tyrosine residue is sulfated.

42. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 39 that binds to DEGDTDLYDYYP wherein at least one tyrosine residue is sulfated.

43. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 39 that binds to YDYYPEE wherein at least one tyrosine residue is sulfated.

44. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 39 that binds to TDLYDYYP wherein at least one tyrosine residue is sulfated.

45. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 36 that is capable of crossreacting with fibrinogen gamma prime (γ').

46. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 45 that binds to EPHAETEYDSLYPED wherein at least one tyrosine residue is sulfated.

47. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 36 that is capable of crossreacting with heparin.

48. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 36 that is capable of crossreacting with complement compound 4 (CC4).

49. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 48 that binds to MEANEDYEDYEYDELPAK wherein at least one tyrosine residue is sulfated.

50. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, of claim 36 that is capable of crossreacting with at least one cell type selected from the group consisting of B-CLL cells, AML cells, multiple myeloma cells, and metastatic cells.

51. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of inhibiting cell rolling.

52. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of inhibiting inflammation.

53. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of inhibiting auto-immune disease.

54. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of inhibiting thrombosis.

55. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of

claims 23-25 that is capable of inhibiting restenosis.

56. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of inhibiting metastasis.

57. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23 25 that is capable of inhibiting growth and/ or replication of tumor cells.

58. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of increasing mortality of tumor cells.

59. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of inhibiting growth and/ or replication of leukemia cells.

60. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of increasing the mortality rate of leukemia cells.

61. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of increasing the susceptibility of diseased cells to damage by anti-disease agents.

62. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of increasing the susceptibility of tumor cells to damage by anti-cancer agents.

63. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of increasing the susceptibility of leukemia cells to damage by anti-leukemia agents.

64. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of inhibiting increase in number of tumor cells in a patient having a tumor.

65. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of decreasing the number of tumor cells in a patient having cancer.

66. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of inhibiting increase in number of leukemia cells in a patient having leukemia.

67. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of decreasing the number of leukemia cells in a patient having leukemia.

68. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of inhibiting cell-cell, cell-matrix, platelet-matrix, platelet-platelet, and/ or cell-platelet complex formation.

69. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of

claims 23-25 that is capable of inhibiting cell-cell, cell-matrix, platelet-matrix, platelet-platelet, and/ or cell-platelet adhesion.

70. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 that is capable of inhibiting cell-cell, cell-matrix, platelet-matrix, platelet-platelet, and/ or cell-platelet aggregation.

71. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 coupled to or complexed with an agent selected from the group consisting of anti-cancer, anti-metastasis, anti-leukemia, anti-disease, anti-adhesion, anti-thrombosis, anti-restenosis, anti-autoimmune, anti-aggregation, anti-bacterial, anti-viral, and anti-inflammatory agents.

72. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to claim 71, wherein the agent is an anti-viral agent selected from the group consisting of acyclovir, ganciclovir and zidovudine.

73. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to claim 71, wherein the agent is an anti-thrombosis/ anti- restenosis agent selected from the group consisting of cilostazol, dalteparin sodium, reviparin sodium, and aspirin.

74. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to claim 71, wherein the agent is an anti-inflammatory agent selected from the group consisting of zaltoprofen, pranoprofen, droxicam, acetyl salicylic 17, diclofenac, ibuprofen, dexibuprofen, sulindac, naproxen, amtolmetin, celecoxib, indomethacin, rofecoxib, and nimesulid.

75. (previously presented) An antibody, antigen-binding fragment thereof, or complex

thereof comprising at least one antibody or binding fragment thereof, according to claim 71, wherein the agent is an anti-autoimmune agent selected from the group consisting of leflunomide, denileukin diftitox, subreum, WinRho SDF, defibrotide, and cyclophosphamide.

76. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to claim 71, wherein the agent is an anti-adhesion/anti-aggregation agent selected from the group consisiting of limaprost, clorcromene, and hyaluronic acid.

77. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to claim 71 wherein the agent is selected from the group consisting of toxins, radioisotopes, and pharmaceutical agents.

78. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to claim 77 wherein the toxin is selected from the group consisting of gelonin, *Pseudomonas* exotoxin (PE), PE40, PE38, ricin, and modifications and derivatives thereof.

79. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to claim 77 wherein the radioisotope is selected from the group consisting of gamma-emitters, positron-emitters, x-ray emitters, beta-emitters, and alpha-emitters.

80. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to claim 77 wherein the radioisotope is selected from the group consisting of ^{111}indium, ^{113}indium, ^{99m}rhenium, ^{105}rhenium, ^{101}rhenium, ^{99m}technetium, ^{121m}tellurium, ^{122m}tellurium, ^{125m}telluriunm ^{165}thulium, ^{167}thulium ^{168}thulium ^{123}iodine, ^{126}iodine, ^{131}iodine, ^{133}iodine, ^{81m}krypton, ^{33}xenon, ^{90}yttrium, ^{213}bismuth, ^{77}bromine, ^{18}fluorine, ^{95}ruthenium, ^{97}ruthenium, ^{103}ruthenium, ^{105}ruthenium, ^{107}mercury, ^{203}mercury, ^{67}gallium and ^{68}gallium.

81. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to claim 77 wherein the pharmaceutical agent is selected from the group consisting of doxorubicin (adriamycin), morpholinodoxorubicin, methoxymorpholinyldoxorubicin, cis-platinum, taxol, calicheamicin, vincristine, cytarabine (Ara-C), cyclophosphamide, prednisone, daunorubicin, morpholinodaunorubicin, methoxymorpholinyldaunorubicin, idarubicin, fludarabine, chlorambucil, interferon alpha, hydroxyurea, temozolomide, thalidomide and bleomycin, and derivatives and combinations thereof.

82. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 coupled to or complexed with a vehicle or carrier that is capable of being coupled or complexed to more than one agent.

83. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 wherein the vehicle or carrier is selected from the group consisting of dextran, lipophilic polymers, hydrophilic polymers, HPMA, and liposomes.

84. (previously amended) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any of claims 23-25 coupled to or complexed with a radioactive isotope or other imaging agent.

85. (previously presented) A diagnostic kit comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to claim 84.

86. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to inhibit cell rolling.

87. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to inhibit inflammation.

88. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to inhibit auto-immune disease.

89. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to inhibit thrombosis.

90. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to inhibit restenosis.

91. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to inhibit metastasis.

92. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to inhibit growth and/ or replication of tumor cells.

93. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding

fragment thereof, according to any one of claims 23-25 in an amount effective to increase mortality of tumor cells.

94. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to inhibit growth and/ or replication of leukemia cells.

95. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to increase the mortality rate of leukemia cells.

96. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to increase the susceptibility of diseased cells to damage by anti-disease agents.

97. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to increase the susceptibility of tumor cells to damage by anti-cancer agents.

98. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to increase the susceptibility of leukemia cells to damage by anti-leukemia agents.

99. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to inhibit increase in number of tumor cells in a patient having a tumor.

100. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to decrease number of tumor cells in a patient having a tumor.

101. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to inhibit increase in number of leukemia cells in a patient having leukemia.

102. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to decrease number of leukemia cells in a patient having leukemia.

103. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to inhibit cell-cell, cell-matrix, platelet-matrix, platelet-platelet, and/ or cell-platelet aggregation.

104. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to inhibit cell-cell, cell-matrix, platelet-matrix, platelet-platelet, and/ or cell-platelet complex formation.

105. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 in an amount effective to inhibit cell-cell, cell-matrix, platelet-matrix, platelet-platelet, and/ or cell-platelet adhesion.

106. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-

binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 coupled to or complexed with an agent selected from the group consisting of anti-cancer, anti-metastasis, anti-leukemia, anti-disease, anti-adhesion, anti-thrombosis, anti-restenosis,anti-autoimmune, anti-aggregation, anti-bacterial, anti-viral, and anti-inflammatory agents.

107. (previously presented) The pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to claim 106, wherein the agent is an anti-viral agent selected from the group consisting of acyclovir, ganciclovir and zidovudine.

108. (previously presented) The pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to claim 106, wherein the agent is an anti-thrombosis/ anti- restenosis agent selected from the group consisting of cilostazol, dalteparin sodium, reviparin sodium, and aspirin.

109. (previously presented) The pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to claim 106, wherein the agent is an anti-inflammatory agent selected from the group consisting of zaltoprofen, pranoprofen, droxicam, acetyl salicylic 17, diclofenac, ibuprofen, dexibuprofen, sulindac, naproxen, amtolmetin, celecoxib, indomethacin, rofecoxib, and nimesulid.

110. (previously presented) The pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to claim 106, wherein the agent is an anti-autoimmune agent selected from the group consisting of leflunomide, denileukin diftitox, subreum, WinRho SDF, defibrotide, and cyclophosphamide.

111. (previously presented) The pharmaceutical composition, comprising an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or

binding fragment thereof, according to claim 106, wherein the agent is an anti-adhesion/anti-aggregation agent selected from the group consisiting of limaprost, clorcromene, and hyaluronic acid.

112. (previously presented) A pharmaceutical composition according to claim 106 wherein the agent is selected from the group consisting of toxins, radioisotopes, and pharmaceutical agents.

113. (previously presented) A pharmaceutical composition according to claim 106 wherein the toxin is selected from the group consisting of gelonin, *Pseudomonas* exotoxin (PE), PE40, PE38, ricin, and modifications and derivatives thereof.

114. (previously presented) A pharmaceutical composition according to claim 106 wherein the radioisotope is selected from the group consisting of gamma-emitters, positron-emitters, x-ray emitters, beta-emitters, and alpha-emitters.

115. (previously presented) A pharmaceutical composition according to claim 106 wherein the radioisotope is selected from the group consisting of ^{111}indium, ^{113}indium, ^{99m}rhenium, ^{105}rhenium, ^{101}rhenium, ^{99m}technetium, ^{121m}tellurium, ^{122m}tellurium, ^{125m}telluriunm ^{165}thulium, ^{167}thulium ^{168}thulium ^{123}iodine, ^{126}iodine, ^{131}iodine, ^{133}iodine, ^{81m}krypton, ^{33}xenon, ^{90}yttrium, ^{213}bismuth, ^{77}bromine, ^{18}fluorine, ^{95}ruthenium, ^{97}ruthenium, ^{103}ruthenium, ^{105}ruthenium, ^{107}mercury, ^{203}mercury, ^{67}gallium and ^{68}gallium.

116. (previously amended) A pharmaceutical composition according to claim 106 wherein the pharmaceutical agent is selected from the group consisting of doxorubicin (adriamycin), morpholinodoxorubicin, methoxymorpholinyldoxorubicin, cis-platinum, taxol, calicheamicin, vincristine, cytarabine (Ara-C), cyclophosphamide, prednisone, daunorubicin, morpholinodaunorubicin, methoxymorpholinyldaunorubicin, idarubicin, fludarabine, chlorambucil, interferon alpha, hydroxyurea, temozolomide, thalidomide and bleomycin, and derivatives and combinations thereof.

117. (previously amended) A pharmaceutical composition, comprising an antibody, antigen-

binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25 coupled to or complexed with a vehicle or carrier that is capable of being coupled or complexed to more than one agent.

118. (previously amended) A pharmaceutical composition according to claim 117 wherein the vehicle or carrier is selected from the group consisting of dextran, lipophilic polymers, hydrophilic polymers, HPMA, and liposomes.

119. (previously amended) A method of inhibiting cell rolling, comprising administering to a patient in need thereof a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

120. (previously amended) A method of inhibiting inflammation, comprising administering to a patient in need thereof a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

121. (previously amended) A method of inhibiting auto-immune disease, comprising administering to a patient in need thereof a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

122. (previously amended) A method of inhibiting thrombosis, comprising administering to a patient in need thereof a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

123. (previously amended) A method of inhibiting restenosis, comprising administering to a patient in need thereof a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one

antibody or binding fragment thereof, according to any one of claims 23-25.

124. (previously amended) A method of inhibiting metastasis, comprising administering to a patient in need thereof a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

125. (previously amended) A method of inhibiting growth and/ or replication of tumor cells, comprising administering to a patient in need thereof, a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

126. (previously amended) A method of increase the mortality rate of tumor cells, comprising administering to a patient in need thereof, a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

127. (previously amended) A method of inhibiting growth and/ or replication of leukemia cells, comprising administering to a patient in need thereof, a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

128. (previously amended) A method of increasing the mortality rate of leukemia cells, comprising administering to a patient in need thereof, a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

129. (previously amended) A method of increasing the susceptibility of diseased cells to

damage by anti-disease agents, comprising administering to a patient in need thereof, a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

130. (previously amended) A method of increasing the susceptibility of tumor cells to damage by anti-cancer agents, comprising administering to a patient in need thereof, a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

131. (previously amended) A method of increasing the susceptibility of leukemia cells to damage by anti-cancer agents, comprising administering to a patient in need thereof, a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

132. (previously amended) A method of inhibiting increase in number of tumor cells in a patient having a tumor, comprising administering to a patient in need thereof, a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

133. (previously amended) A method of decreasing number of tumor cells in a patient having a tumor, comprising administering to a patient in need thereof, a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

134. (previously amended) A method of inhibiting increase in number of leukemia cells in a patient having leukemia, comprising administering to a patient in need thereof, a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding

fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

135. (previously amended) A method of decreasing number of leukemia cells in a patient having leukemia, comprising administering to a patient in need thereof, a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

136. (previously amended) A method of inhibiting cell-cell, cell-matrix, platelet-matrix, platelet-platelet, and/ or cell-platelet complex formation, comprising administering to a patient in need thereof a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

137. (previously amended) A method of inhibiting cell-cell, cell-matrix, platelet-matrix, platelet-platelet, and/ or cell-platelet aggregation, comprising administering to a patient in need thereof a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

138. (previously amended) A method of inhibiting cell-cell, cell-matrix, platelet-matrix, platelet-platelet, and/ or cell-platelet adhesion, comprising administering to a patient in need thereof a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

139. (previously amended) A method of ameliorating the effects of a disease, preventing a disease, treating a disease, or inhibiting the progress of a disease, comprising administering to a patient in need thereof a pharmaceutical composition comprising an effective amount of an antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, according to any one of claims 23-25.

140. (previously presented) A method according to claim 139, wherein the antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, is coupled to or complexed with an agent selected from the group consisting of anti-cancer, anti-metastasis, anti-leukemia, anti-disease, anti-adhesion, anti-thrombosis, anti-restenosis, anti-autoimmune, anti-aggregation, anti-bacterial, anti-viral, and anti-inflammatory agents.

141. (previously presented) The method of claim 140, wherein the agent is an anti-viral agent selected from the group consisting of acyclovir, ganciclovir and zidovudine.

142. (previously presented) The method of claim 140, wherein the agent is an anti-thrombosis/ anti- restenosis agent selected from the group consisting of cilostazol, dalteparin sodium, reviparin sodium, and aspirin.

143. (previously presented) The method of claim 140, wherein the agent is an anti-inflammatory agent selected from the group consisting of zaltoprofen, pranoprofen, droxicam, acetyl salicylic 17, diclofenac, ibuprofen, dexibuprofen, sulindac, naproxen, amtolmetin, celecoxib, indomethacin, rofecoxib, and nimesulid.

144. (previously presented) The method of claim 140, wherein the agent is an anti-autoimmune agent selected from the group consisting of leflunomide, denileukin diftitox, subreum, WinRho SDF, defibrotide, and cyclophosphamide.

145. (previously presented) The method of claim 140, wherein the agent is an anti-adhesion/anti-aggregation agent selected from the group consisiting of limaprost, clorcromene, and hyaluronic acid.

146. (previously presented) The method of claim 140, wherein the agent is selected from the group consisting of toxins, radioisotopes, and pharmaceutical agents.

147. (previously presented) The method of claim 140, wherein the toxin is selected from the

group consisting of gelonin, *Pseudomonas* exotoxin (PE), PE40, PE38, ricin, and modifications and derivatives thereof.

148. (previously presented) The method of claim 140, wherein the radioisotope is selected from the group consisting of gamma-emitters, positron-emitters, x-ray emitters, beta-emitters, and alpha-emitters.

149. (previously presented) The method of claim 140, wherein the radioisotope is selected from the group consisting of ^{111}indium, ^{113}indium, ^{99m}rhenium, ^{105}rhenium, ^{101}rhenium, ^{99m}technetium, ^{121m}tellurium, ^{122m}tellurium, ^{125m}telluriunm ^{165}thulium, ^{167}thulium ^{168}thulium ^{123}iodine, ^{126}iodine, ^{131}iodine, ^{133}iodine, ^{81m}krypton, ^{33}xenon, ^{90}yttrium, ^{213}bismuth, ^{77}bromine, ^{18}fluorine, ^{95}ruthenium, ^{97}ruthenium, ^{103}ruthenium, ^{105}ruthenium, ^{107}mercury, ^{203}mercury, ^{67}gallium and ^{68}gallium.

150. (previously amended) The method of claim 140, wherein the pharmaceutical agent is selected from the group consisting of doxorubicin (adriamycin), morpholinodoxorubicin, methoxymorpholinyldoxorubicin, cis-platinum, taxol, calicheamicin, vincristine, cytarabine (Ara-C), cyclophosphamide, prednisone, daunorubicin, morpholinodaunorubicin, methoxymorpholinyldaunorubicin, idarubicin, fludarabine, chlorambucil, interferon alpha, hydroxyurea, temozolomide, thalidomide and bleomycin, and derivatives and combinations thereof.

151. (previously presented) The method according to claim 139, wherein the antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof, is coupled to or complexed with a vehicle or carrier that is capable of being coupled or complexed to more than one agent.

152. (previously amended) The method according to claim 151, wherein the vehicle or carrier is selected from the group consisting of dextran, lipophilic polymers, hydrophilic polymers, HPMA, and liposomes.

153. (previously presented) An isolated epitope comprising GPIbα amino acid sequence Tyr

276 to Glu 282, wherein at least one of amino acids 276, 278 and 279 is sulfated.

154. (previously presented) The isolated epitope of claim 153 further comprising GPIbαamino acids 283-285.

155. (previously presented) An antibody, antigen-binding fragment thereof, or complex thereof comprising at least one antibody or binding fragment thereof that is capable of binding to the epitope of claim 153, wherein the binding is enhanced when the epitope of claim 153 further comprises GPIbαamino acids 283-285.

156. (previously presented) An isolated GP1bα N-terminal peptide having an apparent molecular weight of about 40 KDa, said peptide comprising an epitope having the sequence YDYYPEE, wherein at least one tyrosine residue in the epitope is sulfated.

157. (previously amended) An isolated GP1bα peptide consisting of amino acids 1 through 282, wherein at least one of amino acids 276, 278 and 279 is sulfated.

158. (previously presented) A polyclonal antibody, antibody fragment or antibody complex that cross-reacts with the variable light chain of human monoclonal antibody scFv Y1.

159. (previously presented) The polyclonal antibody, antibody fragment or antibody complex of claim 158 that cross-reacts with a *Nde*I-*Eco*R1 restriction fragment of the variable light chain of human monoclonal antibody Y-1.

160. (previously presented) A diagnostic kit comprising the antibody or antibody fragment or complex of any of claims158-159.

161. (previously amended) A composition comprising the antibody or antibody fragment or complex of any of claims 158-159 conjugated to doxorubicin.

162. (previously amended) A composition comprising the antibody or antibody fragment or complex of any of claims 158-159 and a pharmaceutically acceptable carrier selected from

the group consisting of dextran, hydrophilic polymers, HPMA, lipophilic polymers and liposomes.

163. (previously amended) A composition comprising the antibody or antibody fragment or complex of any of claims 158-159 admixed with a doxorubicin-decorated liposomes.